

**REMARKS/ARGUMENTS**

The Office Action mailed March 28, 2005, has been received and reviewed. Claims 1 through 27 are currently pending in the application. Claims 1, 2, 4 through 6, 8, 9, 11, 12, 14 through 16, 18, 20, 22, 23, 25, and 26 stand rejected. Claims 3, 7, 10, 13, 17, 19, 21, 24, and 27 have been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation. Applicant has canceled claim 2, amended claims 1, 3, 5, 11 through 13 and 18 through 21, and respectfully requests reconsideration of the application as amended herein.

Claim 1 has been amended to incorporate the subject matter of claim 2, now canceled, and to further specify the nature and location of the at least one depression being ablated in the surface of the semiconductor substrate.

Claims 3 and 5 have been amended solely to depend from claim 1, reflecting the cancellation of claim 2.

Claim 11 has been amended to further specify the nature of the at least one depression and the at least another depression being substantially simultaneously ablated in the substrate surface.

Claims 12, 13 and 18 through 21 have been amended solely for antecedent basis purposes in consequence of the amendments to claim 11.

No new matter has been added.

**35 U.S.C. § 102(b) Anticipation Rejections**

**Anticipation Rejection Based on U.S. Patent Application Publication No. 2002/0011641 to Oswald et al.**

Claims 1, 4, 11, 14, and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Oswald et al. (U.S. Patent Application Serial No. 2002/0011641). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention

must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claim 1, as amended, includes the subject matter of claim 2, now canceled, and to further define the nature and location of the conductive pathway being defined. Claim 1 is thus not anticipated by the reference. Claim 4 is allowable as depending from claim 1.

Claim 11 has been amended to positively recite the nature and shape of the depressions formed in the surface of the semiconductor substrate. The reference fails to substantially simultaneously ablate at least one depression in the form of an elongated trace and at least another depression in the form of a via extending into the substrate transverse to the surface. Stated another way, the reference merely forms a plurality of first grooves 124 which are then filled with semiconductor material, a plurality of second grooves 126 which are then filled with a conductor, and a plurality of third grooves which separate adjacent photovoltaic cells. Nowhere does the reference describe substantially simultaneously ablating depressions of different configurations in the substrate assembly. Accordingly, claim 11 is not anticipated.

Claim 14 is allowable as depending from claim 11.

Claim 22 is allowable as the reference, in fact, does not describe ablating one or more depressions in a sidewall of a semiconductor substrate. Grooves 126 are not formed in the sidewall of the substrate assembly of the reference; in fact, all of the grooves in the process described by the reference are only formed in the top or bottom surface of the photovoltaic cell substrate assembly. See, for example, FIG. 8 of applicants' disclosure and the accompanying discussion at paragraph [0061] thereof regarding formation of depressions in a sidewall of a substrate to form, for example, contacts for vertical surface mount packages. Accordingly, the claim is not anticipated and the rejection should be withdrawn.

### **35 U.S.C. § 103(a) Obviousness Rejections**

Obviousness Rejection Based on U.S. Patent Application Publication No. 2002/0011641 to Oswald et al. and Further in View of U.S. Patent Application Publication No. 2004/0043607 to Farnworth et al.

Claims 2, 5, 6, 12, 15, 16, and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Oswald et al. (U.S. Patent Application Publication No. 2002/0011641), as

applied to claims 1, 4, 11, 14, and 22 above, and further in view of Farnworth et al. (U.S. Patent Application Publication No. 2004/0043607). Applicant respectfully traverses this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Claim 1 has been amended to incorporate the subject matter of claim 2 (now canceled) therein and to further define the nature and location of the conductive pathway being defined. As amended, claim 1 is not obvious over Oswald in view of Farnworth et al. Applicants note that Oswald deposits a conductive metal film 136 in grooves 126 to connect front electrodes 118 with back electrodes 122, which are part of the same film as the filler in grooves 126. While Farnworth teaches planarization of a blanket-deposited conductive film, there would be no motivation to combine Farnworth with Oswald as to planarize conductive metal film 136 of the Oswald structure would render the Oswald device inoperative by removing the portion of conductive metal film 136 which is used to form back electrodes 122. Thus, there is also no reasonable expectation of success for the attempted combination. It appears that Applicant's own disclosure has been impermissibly employed in hindsight to provide a motivation or suggestion for the attempted combination of references. Finally, it is noted that the combination of references fails to teach or suggest forming a depression extending along the surface of a semiconductor substrate; each of the references forms apertures or grooves through their respective structures.

Claims 5 and 6 are allowable as depending from claim 1.

Claim 12 is allowable as depending from claim 11 and because the attempted combination of references as applied is improper and fails to teach or suggest all the claim

limitations (in combination with claim 11) for the reasons set forth immediately above with respect to claim 1.

Claims 15 and 16 are allowable as depending from claims 11 and 12.

Claim 23 is allowable as depending from claim 22 and because the attempted combination of references as applied is improper for the reasons set forth immediately above with respect to claim 1.

Obviousness Rejection Based on U.S. Patent Application Publication No. 2002/0011641 to Oswald et al. and Further in View of U.S. Patent No. 6,429,037 to Wenham et al.

Claims 8, 18, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Oswald et al. (U.S. Patent Application Publication No. 2002/0011641), as applied to claims 1, 4, 11, 14, and 22 above, and further in view of Wenham et al. (U.S. Patent No. 6,429,037). Applicant respectfully traverses this rejection, as hereinafter set forth.

Claims 8, 18 and 25 are allowable as depending from their respective independent claims.

Obviousness Rejection Based on U.S. Patent Application Publication No. 2002/0011641 to Oswald et al. in View of U.S. Patent No. 6,429,037 to Wenham et al. and Further in View of U.S. Patent Application Publication No. 2004/0043607 to Farnworth et al.

Claims 9, 20, and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Oswald et al. (U.S. Patent Application Publication No. 2002/0011641) in view of Wenham et al. (U.S. Patent No. 6,429,037), as applied to claims 8, 18, and 25 above, and further in view of Farnworth et al. (U.S. Patent Application Publication No. 2004/0043607). Applicant respectfully traverses this rejection, as hereinafter set forth.

As noted above with respect to amended claim 1, the attempted combination of Farnworth et al. with Oswald et al. is untenable, as to do so would render the Oswald et al. device inoperative. Further, and with respect to the recitations of each of claims 9, 20 and 26, the combination of Farnworth et al. with Oswald et al. fails to teach or suggest all of the claim limitations of their respective independent claims. Wenham et al. fails to cure the deficiencies in this combination. Accordingly, the rejection of claims 9, 20 and 26 is improper and should be withdrawn.

**Objections to Claims 3, 7, 10, 13, 17, 19, 21, 24, and 27/Allowable Subject Matter**

Claims 3, 7, 10, 13, 17, 19, 21, 24, and 27 stand objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form.

Applicant sincerely appreciates the indication of allowable subject matter, but respectfully asserts that these claims are allowable in their present form.

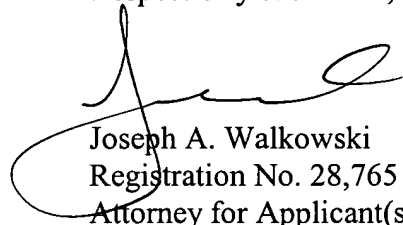
**ENTRY OF AMENDMENTS**

The amendments to claims 1, 3, 5, 11 through 13 and 18 through 21 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

**CONCLUSION**

Claims 1 and 3 through 27 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



Joseph A. Walkowski  
Registration No. 28,765  
Attorney for Applicant(s)

TRASKBRITT  
P.O. Box 2550  
Salt Lake City, Utah 84110-2550  
Telephone: 801-532-1922

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